GENERAL INDEX TO VOLUME XLVII

New scientific names of plants and the final members of new combinations are printed in bold face type; synonyms and page numbers having reference to figures and plates, in *italics*; and all other matter, in ordinary type.

A

Abdominea, 47 Acampe, 47 Acanthephippium, 39 Acanthinophyllum, 123 Aceras, 36

Aceratorchis, 36 Acetosella acetosella, 326

Acianthus, 33 Acineta, 48 Acoridium, 39 Acostaea, 47

Acianthinae, 32

Acrolobus, 295 Acrolophia, 41

Acrostylia, 36 Ada, 46 Adenochilus, 33 Adenocos, 47

Adicea, 179
Adinae, 45

Adrorhizinae, 39 Adrorhizon, 39 Aerangis, 47 Aeranthes, 47

Aerides, 47 Aeridinae, 47 Aganisia, 45

Aglossorhyncha, 43

Agonandra, 291; brasiliensis, 291, 292

Agrostophylum, 43 Alamania, 43

Alfaroa, 90; costaricensis, 91, 92 Alicastrum, 124

Alnaster, 93 Alnobetula, 93

Alnus, 93; acuminata var. ferruginea, 94; ferruginea, 94; jorullensis var. ferruginea, 94

Altensteinia, 34 Ambaiba, 171 Ambrella, 47 Ambuya, 310 Amitostigma, 36

Amparoa, 46

Ampelocera, 112; hottlei, 112, 113

Anacamptis, 36 Ancistrochilus, 39 Ancistrorhynchus, 47 Andrews, Henry N., Jr. & Suzanne Leclerq: Calamophyton bicephalum, A New Species from the Middle Devonian of Belgium, 1

Andriapetalum, 202 Andripetalum, 202; suaveolens, 202

Androcorydinae, 36 Androcorys, 36 Angiadeniae, 36 Angraecopsis, 47 Angraecum, 47 Anguloa, 45 Ankylocheilos, 47 Antellia, 40

Anthogonium, 39 Anthosiphon, 40

Antidaphne, 266; viscoidea, 266

Antigonon, 334; cinerascens, 335; cordatum, 335; flavescens, 336; grandiflorum, 337; guatemalense, 337; leptopus, 335; macrocarpum, 337; platypus, 335

Aphyllorchis, 33 Apostasia, 31 Apostasicae, 31 Apostasioideae, 31 Appendicula, 43 Arachnis, 47 Arethusa, 39 Arethuseae, 36

Arethusinae, 39 Aristolochia, 310; anguicida, 316; appendiculata, 313; arborescens, 317, 318; asperifolia, 322; biflora, 322; caracasana, 313; caudata, 313; chapmaniana, 322; clausseni, 312; costaricensis, 318, 320; emar-ginata, 312; exigua, 312; ferruginea, 318; foetens, 318; geminiflora, 322; gigas, 318; grandiflora, 318, 319, var. bookeri, 318; baughtiana, 318; inflata, 315, 316; loriflora, 316; macroura, 313; martiniana, 314; mathewsii, 322; maxima, 322, 323, var. angustifolia, 322, var. cordata, 322, var. geministora, 322, var. maxima, 322; moschata, 314; nummularifolia, 312; odoratissima, 314, 315, var. grandi-flora, 314; panamensis, 313; pusilla, 312; pyrinea, 312; reticulata, 322; sprucei, 322; subclausa, 312; sylvicola, 321; tapetotricha, 313; tenera, 312; trifida, 313; triloba, 313; trilobata, 313, 314; veraguensis, 320

(361)

1

Aristolochiaceae of Panama, 309 Armodorum, 47 Arnottia, 36 Arpophyllum, 42 Arundina, 48 Asarca, 33 Ascocentrum, 47 Ascochilopsis, 47 Ascoglossum, 47 Ascotaenia, 39 Aspasia, 46 Aspasiinae, 45 Aspidosperma limae, 74 Aulostylis, 39 Auxopus, 44

Balanophoraceae of Panama, 303 Balanostreblus, 121 Barbosella, 47 Barkeria, 43 Barombia, 47 Bartholina, 36 Basigyne, 39 Basiphyllaea, 39 Baskervillea, 34 Batemannia, 45 Bathiea, 47 Batocarpus, 134; orinocensis, 134, 135 Beclardia, 47 Benthamia, 36 Bicornella, 36 Bifrenaria, 45 Bipinnula, 33 Bletia, 39 Bletiinae, 39 Bletilla, 39 Bletillinae, 39 Blochmannia, 353 Boehmeria, 187; angustifolia, 196; aspera, 188; cuspidata, 189; cylindrica, 188; fallax var. ulmifolia, 188; guatemalana, 194; obliqua, 194; pavonii, 189; ramiflora var. cuspidata, 189; rugosa, 196; ulmifolia, 188, 189 Bogoria, 47 Bollea, 45 Bolusiella, 47 Bonatea, 36 Bonniera, 47 Bothriochilus, 39 Brachionidium, 47 Brachtia, 46 Brachtiinae, 45 Brachycorythis, 36 Brassavola, 43 Brassia, 46 Bromheadia, 48 Brosimopsis, 124 Brosimum, 124; alicastrum, 132, 133;

allenii, 128, 129; bernadetteae, 131, 132; caloxylon, 145; costaricanum, 127, 128; galactodendron, 130; guianense, 129, 130; latifolium, 131, 132; ojoche, 126; panamense, 129; sapiifolium, 127; spurium, 145; terrabanum, 133; utile, 130, 131 Broussonetia brasiliensis, 118; plumerii, 118; tinctoria, 118; xanthoxylon, 118 Brownleea, 35 Broughtonia, 43 Bucephalon, 119; racemosum, 119 Bulbophyllinae, 41 Bulbophyllum, 41 Bulleyia, 39 Bunting, George S.: The Genus Schismatoglottis (section Philonotion) in America, Burger, William C.: Sorocea of Panama, 121 Burnettia, 33

C

Caladenia, 33 Caladeniinae, 32 Calamophyton bicephalum, A New Species from the Middle Devonian of Belgium, 1 Calamophyton bicephalum, 6, 11, 12, 15, 18, 19, 20, 21, 22, 23, morphology, 4, diagnosis, 14; primaevum, 21 Calacinum, 337; leptobotrys, 338; tamnifolium, 338 Calanthe, 39 Caldasia, 304; mexicana, 304 Caleana, 34 Calochilus, 33 Calopogon, 39 Calymmanthera, 47 Calypso, 41 Calypsoinae, 40 Calyptrochilum, 47 Camarotis, 47 Campderia nematostachya, 347 Campylocentrum, 47 Capanemia, 46 Capanemiinae, 45 Cardiolocha, 310 Castilla, 139; elastica, 140, 141; fallax, 140; panamensis, 140; tunu, 140, 141 Castilloa, 139; markhamiana, 138 Catasetinae, 39 Catasetum, 39 Cattleya, 43 Cattleyinae, 41 Caucaea, 46 Caularthron, 43 Cecropia, 171, arachnoidea, 173; asperrima, 173; bicolor, 175; commutata, 175; digi-

tata, 175; eximia, 174; bumboldtiana,

173; longipes, 174; maxonii, 175; mexi-

cana, 175, var. macrostachya, 175; obtusifolia, 175, 176; panamensis, 175; peltata, 172, 173; schiedeana, 175; vogeleri, 175

Celtis, 110; aculeata, 111, var. pubescens, 112, var. serrata, 112; anfractuosa, 112; canescens, 108; chichilea, 109; ehrenbergia, 112; epiphylladena, 111; glabratum, 111; hottlei, 112; iguanaeus, 111; laevigata, 111; lima, 109; macrophylla, 108; microcarpa, 109; mollis, 108; orthacathos, 112; platycaulis, 112; rhamnoides, 111; riparia, 108; rufescens, 109; rugosa, 108; schiedeana, 108; zizyphoides, 112

Centrogenium, 35
Centroglossa, 46
Centropetalum, 47
Centrostigma, 36
Cephalanthera, 33
Cephalantherinae, 33
Ceratandra, 35
Ceratochilus, 47
Ceratostylis, 43
Cereaceae, 36
Cerophora, 88

Chaenanthe, 46 Chaetoptelea, 105; mexicana, 105

Chaetoptelea, 105; mexicana Chamaeangis, 47 Chamaeanthus, 47 Chamaeorchis, 36 Chaubardia, 48 Chauliodon, 47 Cheiradenia, 45 Cheirostylis, 34 Chiloglottis, 33 Chilogogon, 43 Chiloschista, 47 Chitonochilus, 43 Chitonanthera, 48 Chloraea, 33 Chloraeinae, 32

Chloranthaceae of Panama, 81 Chlorophora, 116; tinctoria, 117, 118

Chondrorhyncha, 45 Chroniochilus, 47 Chrysocycnis, 45 Chrysoglossum, 40 Chysiinae, 39

Chysis, 39 Chytroglossa, 46 Cirrhaea, 48 Claderia, 48 Claderiinae, 48

Clarisia, 123; mexicana, 124; mollis, 122; panamensis, 123

Classification and Phylogeny in the Orchidaceae, 25

Cleistes, 47 Clethropsis, 93 Coccoloba, 340; acuminata, 350, var. glabra, 350, var. pubescens, 350; alleni, 350; bracteolosa, 346; caracasana, 351, 352, forma glabra, 351; caribaea, 344; changuinolana, 350; coronata, 344; darienensis, 348; goudotiana, 345; lasseri, 342, 343; lehmannii, 350; leptostachya, 346; mazanillensis, 347; nematostachya, 347; novogranatensis, 344; obovata, 345; padiformis, 349; parimensis, 346; riparia, 345; strobulifera, 350; tuerckheimii, 342; uvifera, 347; waitii, 344; williamsii, 350

Coccolobis, 340 Cochleanthes, 45 Cochlioda, 46 Cochliodinae, 45 Codonium, 301 Codonorchis, 33 Coelia, 39 Coeliopsis, 48 Coeloglossum, 36 Coelogyne, 39 Coelogyninae, 39 Cohniella, 46 Coilochilus, 33 Coilotapalus, 171 Colax, 45 Collabiinae, 39 Collabium, 40 Comparettia, 46

Collabium, 40
Comparettiia, 46
Comparettiinae, 45
Conobaea, 337
Constantia, 43
Corallorhiza, 41
Corallorhizinae, 40

Corculum, 334; leptopus, 335

Cordanthera, 46
Corunastylis, 34
Coryanthes, 48
Corybas, 33
Corybasinae, 32
Corycinnae, 35
Corycium, 35
Corylaceae of Panama, 93

Corymbidinae, 34 Corymborchis, 35

Corynaea, 305; crassa, 306, 307 Corysanthinae, 32

Cottonia, 47

Coussapoa, 168; brevipes, 171; chagresiana, 169; magnifolia, 169; nymphaeifolia, 169; panamensis, 169, 170; rekoi, 142

Cranichidinae, 34 Cranichis, 34 Cremastra, 41

Crinum brevilobatum, 73

Crossangis, 47 Crybe, 39 Cryptanthemis, 34 Cryptarrhena, 46 Cryptocentrinae, 40 Cryptocentrum, 40 Cryptochilus, 43 Cryptophoranthus, 47 Cryptopus, 47 Cryptostylidinae, 33 Cryptostylis, 33 Cyanaeorchis, 41 Cycnoches, 39 Cymbidiella, 40 Cymbidiinae, 40 Cymbidium, 40 Cynorchis, 36 Cyphochilus, 43 Cyperorchis, 40 Cypripedieae, 31 Cypripedioideae, 31 Cypripedium, 31 Cyrtidium, 45 Cyrtopodiinae, 40 Cyrtopodium, 41 Cyrtorchis, 47 Cystopus, 34

D

Dactylorchis, 36 Dactylostalix, 41 Dasyphonion, 310 Dendrobiinae, 41 Dendrobium, 41 Dendrochilum, 39 Dendrophthora, 279; biserrula, 280; costaricensis, 280 Dendrophylax, 47 Deroemera, 36 Desfontainea costaricensis, 73 DeWolf, Gordon P., Jr.: Ficus of Panama, 146 Diadenium, 46 Diandrae, 31 Diaphananthe, 47 Diceratostele, 48 Dicerostylis, 34 Dichaea, 46 Dichaeinae, 45 Dickasonia, 39 Dictyanthes, 310 Didiciea, 44 Didymandra, 84 Didymoplexis, 44 Diglosselis, 310 Diglyphosa, 40 Dilochia, 48 Dimerandra, 43 Dinklageella, 47 Diothonaea, 43 Diphylax, 36 Diplacorchis, 36 Diplocalyx, 301

Diplocentrum, 47

Diplomeris, 36 Diploprora, 47 Dipodium, 40 Dipteranthus, 46 Dipterostele, 46 Disa, 35 Disinae, 35 Disperidinae, 35 Disperis, 35 Dithrix, 36 Diuridinae, 33 Diuris, 33 Dodson, Calaway H., & Robert L. Dressler: Classification and Phylogeny in the Orchidaceae, 25 Domingoa, 43 Dorstenia, 177; contrajerva, 177, 178, subsp. tenuiloba, 177, var. boustoni, 177, var. tenuiloba, 177; boustoni, 177 Dossinia, 34 Drakaea, 34 Drakaeinae, 34 Dressler, Robert L., & Calaway H. Dodson: Classification and Phylogeny in the Orchidaceae, 25 Dryadorchis, 47 Drymoda, 44 Duckeella, 49 Duke, J. A.: Polygonaceae of Panama, 323 Duschekia, 93 E

Elleanthus, 48 Embler, Thomas N., & Norton H. Nickerson: Studies Involving Sustained Treatment of Maize with Gibberellic Acid I: Further Notes on Responses of Races, 227 Encheiridion, 47 Encyclia, 43 Endodeca, 310 Endotheca, 310 Endresiella, 48 Ephippianthus, 44 Epiblastus, 43 Epiblema, 33 Epidanthinae, 41 Epidanthus, 43 Epidendreae, 36 Epidendrinae, 41 Epidendrum, 43 Epigeneium, 41 Epipactieae, 32 Epipactiinae, 33

Earina, 43

Eggelingia, 47

Einomeia, 310

Epipactis, 33

Epipogieae, 35

Epipogiinae, 35

Epipogium, 36 Epistephium, 49 Eria, 43 Eriaxis, 49 Eriinae, 41 Eriochilus, 33 Eriopsis, 45 Erycina, 46 Erythrobalanus, 95; humboldtii, 101 Erythrodes, 34 Esmeralda, 47 Eucosia, 34 Eulophia, 41 Eulophidiinae, 40 Eulophidium, 41 Eulophiella, 41 Eulophiinae, 40 Eurycentrum, 34 Eurychone, 47 Eurystyles, 35

F

Fagaceae of Panama, 95

Faya, 88 Fayana, 88

Ficus, 146; subgenus Pharmacosycea, 147, 148; subgenus Urostigma, 146, 148; adhatodaefolia, 152; amazonica, 158; americana, 154; anguina, 162; angustifolia, 158; anthelminthica, 149, 152; antimanensis, 159; arboricida, 155; arbutifolia, 156; arpazusa, 156; arukensis, 161; baccata, 156; berteroi, 160; bonplandiana, 163; bopiana, 150; botryapioides, 158; boyacensis, 152; brevifolia, 158; brittonii, 159; bullenei, 158; campbellii, 160; catesbaei, 158; cerasifolia, 156; cestrifolia, 156; chiriquiana, 154; ciliolosa, 156; citrifolia, 158; citrifolia, 149; colubrinae, 154; complicata, 156; consanguinea, 156; coombsii, 160; costaricana, 163, 164; coybana, 150; crassa, 152; crassinervia, 160; crassiuscula, 152; davidsoniae, 165; dendrocida, 155; dendroctonia, 155; dugandii, 159; duquei, 162; eggersii, 160; elliptica, 155; erythrosticta, 156; eugeniaefolia, 154; eximia, 158; fasciculata, 156; fawcettii, 160; faydeni, 156; finlayana, 150; gemina, 156; gigantea, 158; glabrata, 152; glaucescens, 149; guadalajarana, 150; guaranitics, 150; guaraniti anitica, 159; bartii, 160; hartwegii, 154; haughtii, 161; hemsleyana, 159; hernandezii, 150; ierensis, 162; immersa, 156; insipida, 152; involuta, 163; isophlebia, 164; jacquiniaefolia, 154; jimenesii, 164; kanukuensis, 156; kellermannii, 163; krugiana, 152; laevigata, 158; lancifolia, 156; laurifolia, 149; leavensii, 160; lentiginosa, 158; liebmanniana, 154, 156;

macbridei, 151; macrocyce, 151; mamillifera, 160; manabiensis, 161; martinicensis, 149; maxima, 149; mexicana, 150, 152; mitrophora, 160; myrmecophila, 161; myrtifolia, 156; numphaeifolia, 162; nymphaeaefolia, 162; nymphoides, 162; obtusifolia, 163; ochroleuca, 156; oerstedianum, 154; omphalophora, 154; padifolia, 156; palmicida, 156; panamensis, 161; paraensis, 161; parkeri, 150; pedunculata, 158; perforata, 154; periplocaefolia, 156; pertusa, 156; peruviana, 156; picardae, 150; pittieri, 160; planicostata, 156; plumieri, 150; popenoi, 153; populifolia, 158; populnea, 158; populo-ides, 158; proctor-cooperi, 163; pseudoradula, 150; putumayonis, 161; pyrifolia, 158; radula, 149; radulina, 152; rectinervis, 158; rubricosta, 150; rubrinervis, 158; sapida, 156; segoviae, 152; sintenisii, 154; sonorae, 156; stablii, 160; standleyana, 159; subandina, 159; subscabrida, 150; subtriplinervis, 156; suffocans, 149; sulcipes, 156; surinamensis, 158; syringaefolia, 158; tarapotina, 156; thelephora, 161; thomaea, 158; tolimensis, 153; tonduzii, 151; torresiana, 151; trachelosyce, 157; trigonata, 160; tuerckheimii, 164; turbinata, 156, 159; uberrima, 161; ulei, 150; vermifuga, 152; vicencionis, 150; virens, 149; werckleana, 152; wilsoni, 154; yucatanensis, 160

Finetia, 47 Fitzgeraldiella, 47 Fleurya, 190; aestuans, 190, 191 Fuertesiella, 34

G

Gaiadendron, 264; poasense, 265 Galactodendrum, 124; utile, 130 Gale, 88 Galeandra, 41 Galeola, 49 Galeorchis, 36 Galeottia, 45 Gastorchis, 39 Gastrochilus, 47 Gastrodia, 44 Gastrodieae, 36 Gastrodiinae, 43 Gennaria, 36 Genus Schismatoglottis (section Philonotion) in America, 69 Genyorchidinae, 44 Genyorchis, 44 Geodorum, 41 Giulianettia, 43 Glomera, 43

Glomerinae, 41

Glossodia, 33

15

LLL

L

LLLLLL

L

LLL

LLLLLLLL

L

L

A

Glossorhyncha, 43 Goadbyella, 34 Gomesa, 46 Gonatostylis, 34 Gongora, 48 Gongorinae, 48 Goodyera, 34 Goodyereae, 32 Gorgoglossum, 48 Govenia, 41 Granulosae, 32, 35 Grammangis, 40 Grammatophyllum, 40 Graphorkis, 41 Grobya, 49 Grobyinae, 49 Guaco, 311 Guaiabara, 340; uvifera, 347 Gyaladenia, 36 Gymnadenia, 36 Gymnadeniinae, 36 Gymnochilus, 34 Gynoglottis, 39

Н

Habenaria, 36 Habenariinae, 36 Haemaria, 34 Haenkea, 301 Hancockia, 40 Hedyosmum, 81; brenesii, 81, 83; callososerratum, 82; scaberrimum, 82 Heisteria, 294; concinna, 296; costaricensis, 296; fatoensis, 296; longipes, 298 Helicostylis latifolia, 131; montana, 127 Helosis, 304; aquatica, 304; mexicana, 304, Herminium, 36 Herpysma, 34 Hesiodia, 294 Hetaeria, 34 Hexalectris, 39 Hexaplectris, 311 Hexisea, 43 Heymassoli, 299; spinosa, 299 Himantoglossum, 36 Hintonella, 46 Hippeophyllum, 44 Hocquartia, 310 Hofmeisterella, 46 Holcoglossum, 47 Holothrix, 36 Homalopetalum, 43 Houlletia, 48 Howard, Richard A.: Coccoloba of Panama, 340

ma, 340 Howardia, 311; anguicida, 316; costaricensis, 318; foetens, 318; geminiflora, 322; gollmerii, 322; grandiflora, 318; boffmanni, 322; macroura, 313; maxima, 322; trifida, 313; trilobata, 313

Huntleya, 45 Huntleyinae, 44 Huttonaea, 36 Huttonaeinae, 36 Hybochilus, 46 Hylophila, 34 Hymenorchis, 47

I Imerinaea, 44 Inophloem, 142; armata, 142 Ione, 44 Ionopsidinae, 45 Ionopsis, 46 Ipsea, 39 Isabelia, 43 Ischnocentrum, 43 Ischnogyne, 39 Isiphia, 310 Isochilus, 43 Isotrema, 310 Isotria, 47 Itoasia, 305; crassa, 306

J Jacquiniella, 43 Jimensia, 39 Josephia, 39 Juglandaceae of Panama, 90 Jumellea, 47

K

Karkinetron, 337
Kegeliella, 48
Kerosphaerae, 36
Killip, Ellsworth P.: Urticaceae of Panama, 179
Koellensteinia, 45
Kosaria, 177
Kuhlhasseltia, 34

L

Lacaena, 48 Laelia, 43 Laeliinae, 41 Lacistema, 84; aggregatum, 84, 85; elongatum, 84; myricoides, 84, var. stipitatum, 84; oblongum, 84; pedicellatum, 86 Lacistemaceae of Panama, 84 Langsdorffia, 306; hypogaea, 307, 308; janeirensis, 307; moritziana, 307; rubiginosa, 307 Langsdorfia, 306 Lankesterella, 35 Lathraeophila, 304 Latraeophila, 304 Lecanorchis, 47 Leclerq, Suzanne, & Henry N. Andrews, Jr.: Calamophyton bicephalum, A New Species from the Middle Devonian of

Belgium, 1

Leinkeria, 199 Lemurella, 47 Lemurorchis, 47 Leochilus, 46 Lepanthes, 47 Lepanthopsis, 47 Lepidogyne, 34 Leptoceras, 33 Leptotes, 43 Leucococcus, 194; occidentalis, 195 Leucorchis, 36 Limodorinae, 33 Limodorum, 33 Liparidinae, 44 Liparis, 44 Lissochilus, 41 Listera, 33 Listereae, 32 Listerinae, 33 Listrostachys, 47 Lockhartia, 46 Lockbartiinae, 45 Loefgrenianthus, 43 Loranthaceae of Panama, 263 Loranthus section Oryctanthus, 276; aduncus, 275; conduplicatus, 275; magdalenae, 275; marginatus, 273; occidentalis, 278; orbicularis, 273; paniculatus, 275; piperoides, 284; polystachyus, 272; pyrifolius, 276; schiedeanus, 270; spicatus, 279; theobromae, 275 Loroglossum, 36 Lozanella, 107; enantiophylla, 107, 108; trematoides, 108 Lozania, 86; montana, 86; pedicellata, 86, 87 Lueddemannia, 48 Luisia, 47 Lycaste, 45 Lycastinae, 44 Lycomormium, 48 Lyperanthus, 33

M Maclura affinis, 118; chlorocarpa, 118;

plumiera, 118; polyneura, 118; semper-

virens, 118; subintegerrima, 118; tataiba,

118; tinctoria, 118; velutina, 118; xan-thoxylon, 118
Macodes, 34
Macradenia, 46
Macradeniinae, 45
Macrobalanus, 95
Macropodanthus, 47
Maize: Argentine pop treated with gibberellic acid, 242; internode diagrams, 209, 219; internode diagrams of giberellic acid treated plants, 231, 245, 248, 251; maturation of stem, 207; racial variation in strengthening system, 213; strengthening tissues in stem, 208, 217; tassels of

gibberellic acid treated plants, 258, 259, 260, 261: vascular bundles, 214, 215 Malaxideae, 36 Malaxidinae, 44 Malaxis, 44 Malleola, 47 Mandevilla sandemanii, 77 Manniella, 35 Manniellinae, 34 Manning, Wayne E.: Juglandaceae of Panama, 90 Maquira, 143 Margarocarpus, 194; obliquus, 194 Masdevallia, 47 Matelea rivularis, 80 Maxillaria, 45 Maxillariinae, 44 Mediocalcar, 43 Megastylidinae, 32 Megastylis, 33 Meiracyllium, 42 Menadenium, 45 Mesospinidium, 46 Mertensia, 110; commutata, 112; iguanea, 111; laevigata, 111; rhamnoides, 111; zizyphoides, 111 Microcoelia, 47 Microptelea, 95 Microsaccus, 47 Microstylidinae, 44 Microtatorchis, 47 Microtis, 34 Mikania, 136 Miltonia, 46 Minguartia, 293 Minquartia, 293; guianensis 294 Miscellanea Taxonomica II, 73 Mischobulbon, 40 Moerenhoutia, 34 Momisia, 110; aculeata, 112; anfractuosa, 112; ebrenbergiana, 112; iguanaea, 112; laevigata, 111; zizyphoides, 111 Monandrae, 32 Monandrodendron, 86 Monomeria, 44 Monophyllorchis, 47 Moraceae of Panama, 114 Morella, 88 Mormodes, 39 Mormolyca, 45 Morus plumiera, 118; tataiba, 118; tinctoria, 118; xanthoxylon, 118 Muehlenbeckia, 337; benthami, 338; leptobotrys, 338; quadrangulata, 338; stuebelii, 338; tamnifolia, 338, 339, var. bartwegii, 338, var. bumboldtii, 338, var. laxiflora, 338, var. quadrangulata, 338 Muller, C. H.: Fagaceae of Panama, 95 Murdy, William H .: The Strengthening System in the Stem of Maize, 205, 222-

1

F

FIFE

Myrica, 88; mexicana, 88, 89; xalapensis, Myricaceae of Panama, 88 Myriocarpa, 197; longipes var. yzabalensis, 198; yzabalensis, 198 Myrmechis, 34 Mystacidium, 47 N

Nabaluia, 39 Nageia, 88 Nageliella, 43 Nematospermum, 84 Neobathiea, 47 Neobenthamia, 43 Neobolusia, 36 Neocogniauxia, 43 Neodryas, 46 Neogardneria, 45 Neogyne, 39 Neokoehleria, 46 Neomoorea, 45 Neotinea, 36 Neottia, 33 Neottianthe, 36 Neottieae, 32 Neottiinae, 33 Nephelaphyllum, 40 Nephrangis, 47 Nervilia, 47 Nerviliinae, 47 Neuwiedia, 31

Nevling, Lorin I., Jr.: Balanophoraceae of Panama, 303; Chloranthaceae of Panama, 81; Corylaceae of Panama, 93; Lacistemaceae of Panama, 84; Myricaceae of Panama, 88; Olacaceae of Panama, 293; Opiliaceae of Panama, 291; Proteaceae of Panama, 199; Ulmaceae of Panama, 105 Nickerson, Norton H.: Studies Involving Sustained Treatment of Maize with Gibberellic Acid II: Responses of Plants Carrying Certain Tassel-Modifying Genes,

243 Nickerson, Norton H., & Thomas N. Embler: Studies Involving Sustained Treatment of Maize with Gibberellic Acid I: Further Notes on Responses of Races, 227

0

Nidema, 43 Nigritella, 36 Niphus, 310 Notylia, 46 Notyliinae, 45

Oakes-amesia, 46 Oberonia, 44 Octadesmia, 43 Octarrhena, 48

Octomeria, 47 Odontochilus, 34 Odontoglossinae, 45 Odontoglossum, 46 Oeonia, 47 Oeoniella, 47 Olacaceae of Panama, 293 Olmedia, 143; armata, 142; aspera, 143, Olmediopsis, 144 Oluntos, 146 Omoea, 47 Oncidiinae, 45

Opbrydinae, 36 Ophrys, 36 Opiliaceae of Panama, 291 Orchidaceae, classification and phylogeny, 25; anther, 54; discussion, 65; evolution of pollinia, 57; habit, 50; hypothetical primitive orchid flower, 53; keys, 30, 32, 35, 36; phylogenetic list of subtribes, 29; phylogeny, 49; pollen apparatus, 56, 58; primitive and advanced features, 61; rostellum, 55; saprophytism, 51; suggested relationships in the Epidendreae, 51; tribal delineation, 27; tribal relation-

Orchideae, 35 Orchidinae, 36 Orchidoideae, 32 Orchipedum, 34 Orchis, 36 Orestia, 44 Orleanesia, 43 Ornithocephalinae, 45 Ornithocephalus, 46 Ornithochilus, 47

ships, 62, 63

Oncidium, 46

Opbrydeae, 35

Oryctanthus, 276; cordifolius, 277; occidentalis, 278; spicatus, 278, 279 Otochilus, 39

Otostylis, 45 Oxyanthera, 48

Pachites, 35 Pachyphyllinae, 46 Pachyphyllum, 47 Pachyplectrinae, 49 Pachyplectron, 49 Pachystoma, 39 Palmorchidinae, 48 Palmorchis, 48 Panisea, 39

Panopsis, 202; costaricensis, 202; mucronata, 202; suaveolens, 202, 203

Paphinia, 48 Paphiopedilum, 31 Papperitzia, 46

Papperitziinae, 45 Papuaea, 34 Paradisianthus, 45 Parietaria microphylla, 181 Pedilochilus, 41 Pelexia, 35 Pelatantheria, 47 Peltastes ampliflorus, 77; peruvianus, 77; tubiflorus, 77 Pennilabium, 47 Perebea, 136; acanthogyne, 138; castilloides, 138; glabrata, 138; guianensis, 137, 138; hispidula, 138; integrifolia, 138; laevigata, 138; markhamiana, 138; molliflora, 139; pseudopeltata, 138; tessmannii, 138; trophophylla, 139; xanthochyma, 138 Peristeria, 48 Peristylus, 36 Perrierella, 47 Persicaria acuminata, 331; bydropiperoides, 330; mexicana, 330; punctata, 328, var. eciliata, 328, var. robustior, 328, var. tacubayana, 328; robustior, 328

Perularia, 36
Pescatoria, 45
Petalocentrum, 46
Pfeiffer, Howard W.: Aristolochiaceae of
Panama, 309

Phajinae, 39 Phajus, 39 Phalaenopsis, 47 Phanerocalyx, 295

Pharmocosycea, 146; angustifolia, 152; glaucescens, 149; grandaeva, 149; gwyanensis, 149; hernandezii, 149; mexicana, 149; peruviana, 156; pseudoradula, 149; rigida, 149; vermifuga, 152
Phenax, 196; angustifolius, 196; mexicanus,

196; rugosus, 196, 197 Philonotion, 70; spruceanum, 70; williamsii,

Pholidota, 39

71

Phoradendron, 280; allenii, 285; cooperi, 288; corynarthron, 285, var. seibertii, 285; crispum, 284; davidsoniae, 285; emarginatum, 288, var. minor, 288; gracilispicum, 286; berrerense, 289; latifolium, 284; minor, 288; mucronatum, 288, 280; novae-helvetiae, 286, 287; pergranulatum, 281; piperoides, 284; robaloense, 282, 283; rubrum var. brevispica, 289, var. latifolia, 289; seibertii, 285; sonanum, 289; supravenulosum, 282; tonduzii, 286; trinervium, 289; undulatum, 287; venzuelense, 289, 290; woodsonii, 284

Phormangis, 47 Phragmipedium, 31 Phragmorchis, 47 Phreatia, 48 Phrygilanthus, 270; panamensis, 270, 271 Phthirusa, 275; adunca, 275; paniculata, 275; pittieri, 276; pyrifolia, 276, 277; theobromae, 275

Phyllomphax, 36 Phymatidium, 46 Physosiphon, 47 Physurinae, 34 Physurus, 34

Pilea, 179; acuminata, 186; auriculata, 184, 185; cbrysosplenioides, 186; ciliaris, 181; cornmanae, 182; donnell-smithiana, 183; gracilipes, 184; hyalina, 185; imparifolia, 181; involucrata, 186; microphylla, 181; muscosa, 181; nummularifolia, 185; pallida, 186; parietaria, 181; pubescens, 187, var. involucrata, 186; ptericlada, 183; rugosissima, 184; trianaeana, 182

Pilophyllum, 40 Pimecaria, 88, 299 Piper aggregatum, 84; fasciculare, 84 Piratinera, 124; guianense, 129; panamensis, 129; terrahana, 133

129; terrabana, 133 Pistolochia, 310 Pityphyllum, 45 Plagistra, 311 Platanthera, 36 Platycoryne, 36 Platycoryne, 36 Platylottis, 43 Platylepis, 34 Platyrhiza, 46 Platystele, 47 Plectrelminthes, 47 Flectrophora, 46 Pleione, 39 Pleonandrae, 31

Pleurothallidinae, 47 Pleurothallis, 47 Pleurothallopsis, 47 Plocoglottis, 39

Plocoglottis, 39 Poaephyllum, 43 Podangis, 47 Podochilinae, 41 Podochilus, 43 Pogonia, 47

Pogoniinae, 47 Pogoniopsis, 47 Poicilanthe, 40 Polychondreae, 32 Polycycnis, 48

Polygonaceae of Panama, 323

Polygonum, 326; acre, 328, var. aquatile, 328, var. brachystachyum, 328, var. confertiflorum, 328, var. leptostachyum, 328, var. riparium, 328; acuminatum, 320, 331, var. brachystemon, 331, var. capense, 331, var. glabrescens, 331, var. humboldtii, 331, var. microstemon, 331, var. setigerum, var. setigerum,

Puruma, 165

331, var. subcordatum, 331, var. weddellii, 331: antibaemorrhoidale forma aquatile, 328, forma riparium, 328, var. aquatile, 328, var. riparium, 328; barbatum, 330; convolvulus, 329, 333; cuspidatum, 331; erectum, 331; flexuosum, 338; floribundum, 331; grandiflorum, 337; guatemalense, 331; hispidum, 327, 329; bydropiper, 328; bydropiperoides, 328; hydropiperoides, 330, forma leucochranthum, 330, forma strigosum, 330, var. asperifolium, 331, var. busbianum, 331, var. digitatum, 330, var. macerum, 330, var. macouni, 330, var. senebelense, 330, var. strigosum, 330, var. virgatum, 330; maritimum, 328; mexicanum, 329, 332; mite, 330; pennsylvanicum, 332; punctatum, 328, 329, var. aquatile, 328, forma stipitatum, 328, var. confertiflorum, 328, forma longicollum, 328, var. eciliatum, 328, var. ellipticum, 328, var. littorale, 328, var. majus, 328, var. mexicanum, 328, var. parviflorum, 328, var. parvum, 328, var. riparium, 328, var. robustior, 328, var. tacubayanum, 328, var. typicum, 328; quadrangulatum, 338; robustius, 328; setigerum, 331; tamnifolium, 338; uvifera, 347; virgatum, 330

Polyotidium, 46
Polyrhiza, 47
Polystachya, 43
Polystachyinae, 41
Pomatocalpa, 47
Ponera, 43
Ponerinae, 41
Pantheiva, 34
Porpax, 43
Porphyrodesme, 47
Porphyroglottis, 40
Porphyrostachys, 34
Porroglossum, 47

Poulsenia, 142; aculeata, 142; armata, 142 Pourouma, 165; johnstonii, 166; oraria, 168; radula, 166, 167; scobina, 167 Pouzolzia, 194; guatemalana, 194; obliqua, 194, 195; occidentalis, 195

194, 195; occidentalis, 1 Prasophyllinae, 33 Prasophyllum, 34 Prescottia, 34 Prestonia caudata, 77 Procris rugosa, 196 Promenaea, 45 Proteaceae of Panama, 199 Pseudacoridium, 39

Pseuderia, 41 Pseudocentrum, 34 Pseudolmedia, 144; *havanensis*, 145; spuria, 145

Pseudosorocea, 121 Psilochilus, 47 Psittacanthus, 267; allenii, 268, 269; americanus, 269; chrismarii, 269; lateriflorus, 268; scheryi, 267; schiedeanus, 270
Psophiza, 311
Pterichis, 34
Pteriphis, 311
Pteroglossaspis, 41
Pterostemma, 46
Pterostemminae, 45
Pterostylidinae, 34
Pterostylidinae, 34
Pterostylis, 34
Pterygodium, 35
Pulverae, 32

0

Quekettia, 46
Quercus, 95; subgenus erythrobalanus, 96; subgenus lepidobalanus, 95; baruensis, 103; boquetensis, 102; chiriquiensis, 102; chiriquiensis, 102; chiriquiensis, 100; corrugata, 99; davidsoniae, 96, 97; gulielmitreleasei, 97, 102; humboldtii, 101; oocarpa, 97, 98; panamandinaea, 97, 99; seemannii, 97, 102; seibertii, 96, 97

R

Rangaeris, 47
Raptostylus, 295
Renanthera, 47
Renantherella, 48
Restrepia, 47
Rhamnus iguanaeus, 111; micranthus, 108
Rhaptostylum, 294
Rhipidoglossum, 48
Rhizanthella, 34
Rhizanthellinae, 34
Rhobala, 199; boissieriana, 200; complicat

Rhizanthellinae, 34
Rhopala, 199; boissieriana, 200; complicata, 200; dentata, 200; frondosa, 200; gardneri, 200; macropoda, 200; martii, 200, var. simplicifolia, 200; media, 200; ovalis, 200; tomentosa var. integrifolia, 200; veraguensis, 200

veraguensis, 200 Rhynchophreatia, 48 Rhynchostylis, 48 Ribeirea, 301 Ridleyella, 47 Ridleyellinae, 47 Rimacola, 33 Risleya, 44

Risleya, 44
Rizzini, Carlos Toledo: Loranthaceae of

Panama, 263 Robiquetia, 48 Rodriguezia, 46 Rodrigueziopsis, 46 Roeperorchis, 36 Roezliella, 46 Ropala, 199 Rottboelia, 299

Roupala, 199; borealis, 200; darienensis, 200; discolor, 200; dissimilis, 200; mon-

tana, 200, 201, var. dentata, 200; panamensis, 200; pyrifolia, 200; repanda, 200 Rudolfiella, 45 Rumex, 324; acetosella, 326; crispus, 325, 326 Rupala, 199 Rusbyella, 46

S Saccoglossum, 41 Saccolabiopsis, 48 Saccolabium, 48 Sahagunia, 123; urophylla, 119 Salicaceae of Panama, 87 Sanderella, 46 Sarcanthinae, 47 Sarcanthus, 48 Sarcochilus, 48 Sarcoglottis, 35 Sarcogonum, 337; tamnifolium, 338 Sarcorrhynchus, 48 Sarcostoma, 43 Satyriinae, 35 Satyrium, 35 Saundersia, 46 Saundersiinae, 45 Saurobroma, 110 Sauroglossum, 35 Scaphosepalum, 47 Scaphyglottis, 43 Scelochilus, 46 Schismatoglottis, 69; section Philonotion, 70; americana, 70; spruceanum, 70, var. spruceanum, 70, var. williamsii, 71 Schizochilus, 36 Schizodium, 35 Schlimia, 48 Schoenorchis, 48 Schoepfia, 301; americana, 302; arborescens, 302; schreberi, 301, 302 Schoepfiopsis, 301 Schwartzkopffia, 36 Scuticaria, 45 Secretania, 293; loranthacea, 294 Selenipedium, 31 Semidopsis, 93 Senftenbergia, 306; moritziana, 307 Sepalosaccus, 45 Sepalosiphon, 43 Serapiadinae, 36 Serapias, 36 Sertifera, 48 Sievekingia, 48 Sigmatogyne, 39 Sigmatostalix, 46 Silvorchis, 35 Siphidia, 310 Siphisia, 310

Skutchia, 119

Soaresia, 123 Sobralia, 48 Sobraliinae, 48 Sodiroella, 46 Solenangis, 48 Solenidium, 46 Solenocentrum, 34 Solenostigma, 110 Sophronitella, 43 Sophronitis, 43 Sorocea, 121; affinis, 121, 122; pubivena, 122 Spathoglottis, 39 Sphyrarhynchus, 48 Sphrastylis, 46 Spiculaea, 34 Spiranthes, 35 Spiranthinae, 34 Sponia, 108; canescens, 108; crassifolia, 109; grisea, 109; integerrima, 109; lima, 109; macrophylla, 108; micrantha, 108; mollis, 108; riparia, 108; schiedeana, 109 Stachyphyllum, 265 Stanhopea, 48 Stanhopeinae, 48 Staurochilus, 48 Stauropsis, 48 Stelis, 47 Stellilabium, 46 Stenia, 45 Stenoglossinae, 41 Stenoglottis, 36 Stenospermatium verecundum, 70 Stenoptera, 34 Stereosandra, 36 Steveniella, 36 Stigmatodactylus, 44 Stolzia, 43 Strengthening System in the Stem of Maize, 205 Studies Involving Sustained Treatment of Maize with Gibberellic Acid I: Further Notes on Responses of Races, 227 Studies Involving Sustained Treatment of Maize with Gibberellic Acid II: Responses of Plants Carrying Certain modifying Genes, 243 Struthanthus, 272; aduncus, 275; marginatus, 273; orbicularis, 273; polystachus, 272; rotundatus, 273, 274 Sturmieae, 36 Sutrina, 46 Sychinium, 177 Synzyganthera, 84 Systeloglossum, 46

Tabernaemontana brachyantha, 76 Taeniophyllum, 48 Taeniopsis, 39 Taeniorrhiza, 48

Tafalla, 81 Tainia, 40 Telipogon, 46 Telipogoninae, 45 Tetramicra, 43 Teuscheria, 45 Thecostele, 48 Thecostelinae, 48 Thelasiinae, 48 Thelasis, 48 Thelymitra, 33 Thelymitrinae, 32 Theodorea, 46 Thonningia janeirensis, 307; mexicana, 307 Thrixspermum, 48 Thunia, 48 Thuniinae, 48 Thysanoglossa, 46 Tipularia, 41 Townsonia, 33 Traunsteinera, 36

Trema, 108; canescens, 109; chichilea, 109; enantiophylla, 108; integerrima, 109; lima, 109; macrophylla, 109; melinona, 109; micrantha, 108, 109, var. obtusatum, 109, var. strigillosa, 109; mollis, 109; riparia, 109; rufescens, 109; schiedeana, 109; strigillosa, 109

Trevoria, 48
Triceratorhynchus, 48
Trichocentrume, 45
Trichocentrum, 46
Trichocents, 46
Trichopilia, 46
Trichopiliinae, 45
Tridactyle, 48
Triphora, 47

Triplaris, 353; americana, 355, 357; auriculata, 354; cumingiana, 355, 356; euryphylla, 357; felipensis, 357; laxa, 357; lindeniana, 356; macombii, 354, var. rufescens, 354; melaenodendron, 354, 355; noli-tangere, 357; pavonii, 357; pyramidalis, 357

Trigonidium, 45 Trizeuxis, 46 Tropexa, 311

Trophis, 119; americana, 119, var. meridionalis, 119, var. ramon, 119; macrostachya, 122; racemosa, 119, 120

Tropidia, 35 Tropidiinae, 34 Tubilabium, 34 Tylostigma, 36

U

Uleiorchis, 44 Ulmaceae of Panama, 105 Ulmus, 105; mexicana, 105, 106 Uncifera, 48 Urera, 191; baccifera, 192; caracasana, 192; elata, 193; girardiniodes, 191; jac-

quini, 192; laciniata, 191

Urostigma, 146; amazonicum, 158; angustifolium, 158; baccatum, 156; bonplandianum, 163; chiriquianum, 154; costaricanum, 163; erythrostictum, 156;
engeniaefolium, 154; geminum, 156;
bartwegii, 154; involutum, 163; liebmannianum, 154; oerstedianum, 154; paraensis, 161; sapidum, 156; schiedeanum,
156; sulcipes, 156; turbinatum, 156

Urtica aestuans, 191; baccifera, 192; caracasana, 192; ciliaris, 181; cylindrica, 188; elata, 193; involucrata, 186; laciniata, 191; nummularifolia, 185; parietaria, 181; verrucosa, 192

Urticaceae of Panama, 179

V

Vanda, 48
Vandeae, 36
Vandopsis, 48
Vanilla, 49
Vanillinae, 49
Vargasiella, 44
Vargasiellinae, 44
Velasquezia, 353; melaenodendron, 354
Viscum cordifolium, 277; latifolium, 284; mucronatum, 288; undulatum, 287
Vrydagzynea, 34

W

Warrea, 41 Wareella, 45 Warmingia, 46 Woytkowskia spermatochorda, 74, 75 Wullschlaegelia, 34

X

Xerorchis, 48
Ximenia, 299; aculeata, 299; americana, 299, 300; arborescens, 300; elliptica, 299; fluminensis, 300; inermis, 299; laurina, 300; loranthifolia, 300; montana, 299; multiflora, 299; oblonga, 300; spinosa, 299
Xylobium, 45

Y

Yoania, 41 Yolanda, 47 Ypsilopus, 48

Z

Zeuxine, 34 Zizyphus commutata, 111; iguanea, 111 Zygopetalinae, 44 Zygopetalum, 45 Zygostates, 46

